<u>REMARKS/ARGUMENTS</u>

This Amendment is being filed in response to the Office Action dated June 21, 2005. Reconsideration and allowance of the application in view of the remarks to follow is respectfully requested.

Claims 21-40 are pending in this application of which Claims 21 and 36 are independent claims.

In the Office Action, the Examiner rejected Claims 21-40 under the judicially created doctrine of double patenting as being unpatentable over Claim 1-10 of U.S. Patent No. 6,298,136. In response, a Terminal Disclaimer in compliance with 37 C.F.R. §1.321(c) is enclosed herewith. Accordingly, the Applicant respectfully requests that this ground for rejection be withdrawn.

Claim 40 is objected to for an informality that is in fact, a typographic error. As correctly pointed out in the Office Action, Claim 40 is intended to depend on Claim 39. Claim 40 is amended herein to correct this typographic error. Since this error was nothing more than a typographic error, it is respectfully submitted that Claim 40 should be interpreted to have a full range of equivalents under the Doctrine of Equivalents.

Claim 30 is rejected under 35 U.S.C. §112, first paragraph supposedly for failing to comply with the enablement requirement due to the term "concatenating the swapped sub-blocks" in Claim 30. This rejection is respectfully traversed. It is respectfully

submitted that the term concatenate is a well known English Language word that, for example, means to link two or more information units, such as character strings or files, so that they form a single unit. A synonym for concatenate is "merge". This term is well supported by the patent application as filed which, as the Office Action mentions "discloses merging selected part of sub-blocks ..." (See, Office Action, page 6, ¶ 9.) Further, this term was used in the Application as filed, such as in originally filed Claim 10 and is shown in figure 7, which is one embodiment to which Claim 30 is directed. The Office Action takes the position that the specification does not indicate how the sub-blocks are concatenated. This point is respectfully refuted, however, this not a requirement for enablement. However, in the interest of expediting allowance of this patent application, the specification is amended here to state that "... the swapped sub-blocks are concatenated to form a single result. This is illustrated in Figure 7."

The MPEP under § 2173 in a section entitled "Claims Must Particularly Point Out and Distinctly Claim the Invention" states that "[t]he primary purpose of this requirement of definiteness of claim language is <u>to ensure that the scope of the claims is clear so the public is informed of the boundaries of what constitutes infringement of the patent</u>. A <u>secondary purpose is to provide a clear measure of what applicants regard as the invention so that it</u>

can be determined whether the claimed invention meets all the criteria for patentability and whether the specification meets the criteria of 35 U.S.C. 112, first paragraph with respect to the claimed invention." MPEP § 2173.02 entitled "Clarity and Precision" goes on to make clear that (emphasis provided):

> The essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of: (A) The content of the particular application disclosure; (B) The teachings of the prior art; and (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.
>
> In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, >by providing clear warning to others as to what constitutes infringement of the patent<. See, e.g., Solomon v. Kimberly-Clark Corp., 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000). See also In re Larsen, No. 01-1092 (Fed. Cir. May 9, 2001) (unpublished) (The preamble of the Larsen claim recited only a hanger and a loop but the body of the claim positively recited a linear member. The court observed that the totality of all the limitations of the claim and their interaction with each other must be considered to ascertain the inventor's contribution to the art. Upon review of the claim in its entirety, the court concluded that the claim at issue apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112 paragraph 2.).

It is respectfully submitted that there are many ways of concatenating sub-blocks that would be understood by a person skilled in the art to be encompassed by Claim 30 (several examples of merging sub-blocks are provided, e.g., see, patent application, page 5, lines 7-8) and it is not necessary for the Applicant to describe any one in the context of Claim 30 to meet the requirements of 35 U.S.C. 112 paragraph 2, or first paragraph for that matter. In fact, the claim term should not be interpreted as being limited to any one. Clearly numerous other ways of concatenating sub-blocks would occur to a person skilled in the art, and it is the Applicant's intention that Claim 30 would apply to any method so chosen.

It is therefore respectfully submitted that Claim 30 complies with the enablement requirement of 35 U.S.C. §112, first paragraph, and second paragraph for that matter, and an indication to that effect is respectfully requested.

Claims 23-35 and 38-40 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite due to the term "substantially" which is alleged is a relative term to which one of ordinary skill in art would not be reasonably appraised of the scope of the invention. The Office Action goes on to interpret the term "substantially having equal length" as encompassing "having any length". This rejection is respectfully traversed and the characterization of the term is respectfully refuted.

The MPEP under § 2173.05(b) in a section entitled "Relative Terminology" makes clear that (emphasis provided) "[t]he fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite under 35 U.S.C. 112, second paragraph. Seattle Box Co., v. Industrial Crating & Packing, Inc., 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984). Acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification." The MPEP in § 2173.05(b) addresses specifically the term "substantially" wherein it is recognized that:

> D.   "Substantially"
> The term "substantially" is often used in conjunction with another term to describe a particular characteristic of the claimed invention. It is a broad term. In re Nehrenberg, 280 F.2d 161, 126 USPQ 383 (CCPA 1960). The court held that the limitation "to substantially increase the efficiency of the compound as a copper extractant" was definite in view of the general guidelines contained in the specification. In re Mattison, 509 F.2d 563, 184 USPQ 484 (CCPA 1975). The court held that the limitation "which produces substantially equal E and H plane illumination patterns" was definite because one of ordinary skill in the art would know what was meant by "substantially equal." Andrew Corp. v. Gabriel Electronics, 847 F.2d 819, 6 USPQ2d 2010 (Fed. Cir. 1988).

It is respectfully submitted that the term "substantially ... equal" is recognized by the Federal Circuit and the United States Patent and Trademark Office as definite because one of ordinary skill in the art would know what was meant by "substantially ... equal". Therefore it is respectfully submitted that this term

satisfies 35 U.S.C. §112, second paragraph. Accordingly, it is respectfully requested that the 35 U.S.C. §112, second paragraph rejection of Claims 23-35 and 38-40 be withdrawn.

Claims 36-40 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter to which applicant regards as the invention. The Office Action goes on to allege that since the "words 'input' and 'processing' should have 'means' ... as required by 35 U.S.C. 112, sixth paragraph." The Office Action further interprets "input for obtaining" and "cryptographic processing portion" respectively as "input means for obtaining" and "cryptographic processing means for processing". This rejection is respectfully traversed and the characterization of the terms is respectfully refuted.

It is respectfully submitted that each of Claims 36-40 particularly point out and distinctly claim the subject matter to which applicant regards as the invention. It is further respectfully submitted that 35 U.S.C. §112, second paragraph, nor sixth paragraph for that matter requires claims to be drafted having means language. In fact 35 U.S.C. §112, sixth paragraph states that "[a]n element in a claim for a combination <u>may be</u> <u>expressed as a means or step for performing a specified</u> function without the recital of structure ..." It is also not clear how a claim for a processor having inputs or processing portions is not a

sufficient recital of structure. It in fact is Applicant's desire that Claims 36-40 be interpreted as encompassing a full range of equivalents under the Doctrine of Equivalents. It is therefore respectfully submitted that the rejection of Claims 36-40 under 35 U.S.C. §112, second paragraph is improper and it respectfully requested that the rejection be withdrawn.

Claims are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 5,778,074 to Garcken ("Garcken").

The Applicant specifically claims a program (Claim 21) and processor (Claim 36), wherein the merging step is performed by executing a **non-linear function** for non-linearly merging a select part of the plaintext with a first key in **a single step**. Claim 21 further requires "a program portion for deriving said digital output block from said data block B1 and the remaining part of the digital input data block M ..."

The Office Action asserts that Col. 5, line 59 through Col. 6, line 16 presents a non-linear, single step process. This position is respectfully refuted.

It is respectfully submitted that Garcken teaches a multi-step linear process. As taught in Garcken, "[e]ach row of a matrix formed by the set of linearly independent numbers is, in turn, XORed with none to all of the remaining rows of the matrix and is replaced by the result before the next row is modified... This process may proceed through each of the rows of the matrix acting

as the operand row." Garcken further teaches "[a]t the completion of the Steps, N_0 through N_{n-1} comprise a new complete set if linearly independent n-bit numbers which have been modulated by the key variable." (See, Col. 8, lines 7-9.)

An "Introduction to Switching Theory and Logical Design", by Hill and Peterson, published 1968, presents a definition of a linear function in the context of a switching system as would be readily understood by a person of ordinary skill in the art, following on page 420, it states that (emphasis provided):

"A linear switching function is a switching function, which may be realized using only AND gates and exclusive-or gates."

The above is true because in a switching system (i.e. a two-value, 0-1, system, which is conventionally termed a "digital" system), the "addition" function corresponds to an exclusive-or function, and the "multiplication" function corresponds to an AND function.

Accordingly, an exclusive-or function is in fact a linear function and this in fact is the function taught by Garcken. Garcken specifically illustrates that the function described is performed by an AND and XOR function (e.g., see, FIG. 2B, 3A, and 3B of Garcken). By definition, this is a linear operation.

Accordingly, the Applicant respectfully submits that Garcken teaches a linear multi-step operation. The Applicant further submits that Garcken does not teach or suggest "<u>a program portion for deriving said digital output block from said data block B1 and the remaining part of the digital input data block M</u> ..." as required by Claim 21.

Based on the foregoing, the Applicants respectfully submit that independent Claims 21 and 36 are patentable over Garcken and notice to this effect is earnestly solicited. Claims 22-35 and 37-40 respectively depend from one of Claims 21 and 36 and accordingly are allowable for at least this reason as well as for the separately patentable elements contained in each of said claims. Accordingly, separate consideration of each of the dependent claims is respectfully requested.

In addition, the Applicants deny any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. The Applicants reserve the right to submit further arguments in support of the above stated position as well as the right to introduce relevant secondary considerations including long-felt but unresolved needs in the industry, failed attempts by others to invent the invention, and the like, should that become necessary.

Applicants have made a diligent and sincere effort to place this application in condition for immediate allowance and notice to this effect is earnestly solicited.

Early and favorable action is earnestly solicited.
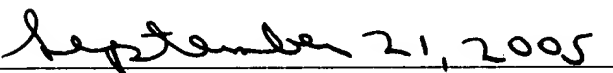
Respectfully submitted,

By _____

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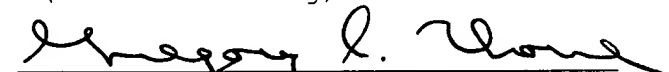Attorney for Applicant(s)
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